



Internal Use Only

website:<http://biz.LGservice.com>

LCD TV

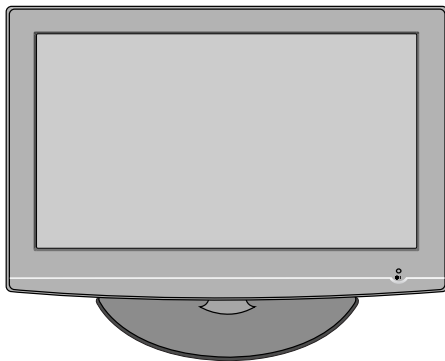
SERVICE MANUAL

CHASSIS : LP81A

MODEL : 26LG30R 26LG30R-MA

CAUTION

BEFORE SERVICING THE CHASSIS,
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



SPECIFICATION

NOTE : Specifications and others are subject to change without notice for improvement.

1. Application range

This specification is applied to LP81A chassis.

2. Requirement for Test

Each part is tested as below without special appointment.

- (1) Temperature : $25 \pm 5^{\circ}\text{C}$ ($77 \pm 9^{\circ}\text{F}$), CST : $40 \pm 5^{\circ}\text{C}$
- (2) Humidity : $65\% \pm 10\%$
- (3) Power : Standard input voltage (100-240V~, 50/60Hz)
* Standard Voltage of each products is marked by models.
- (4) Specification and performance of each parts are followed each drawing and specification by part number in accordance with BOM.
- (5) The receiver must be operated for about 20 minutes prior to the adjustment.

3. Test method

- (1) Performance : LGE TV test method followed
- (2) Demanded other specification
 - Safety : CE, IEC Specification
 - EMC : CE, IEC

4. General Specification(LCD Module)

Item	Specification			Measurement	Result	Remark
Display Screen Device	26" wide Color Display Module					Resolution:1366X768(HD)
	32" wide Color Display Module					Resolution:1366X768(HD)
Aspect Ratio	16:9					
LCD Module	26" TFT WXGA LCD					26" HD MAKER :CMO
	32" TFT WXGA LCD					32" HD MAKER :LPL CPT, CMO, AUO, SHARP
Operating Environment	1) Temp. : 0 ~ 40 deg 2) Humidity : 0 ~ 85%					LGE SPEC
Storage Environment	1) Temp. : -20 ~ 60 deg 2) Humidity : 0 ~ 85 %					
Input Voltage	100-240V~, 50/60Hz					
Power Consumption	Power on (Blue) : LG30/LG50					Volume: 1/8 volume of sound distortion point
	Power on (White) : LG60					
	≤ TBD	26" HD				
	≤ TBD	32" HD				
	St-By (Red) ≤ 1.0 W (All)					LG60:St-by Light condition
LCD Module (Maker : AUO, CMO, CPT, LPL, SHARP)	Maker		Inch	(H) x (V) x (D)	unit	Remark
	CMO(HD)	Outline Dimension	26"	626 x 373 x 43.7	mm	[with inverter]
		Pixel Pitch	26"	0.1405 x 0.4215	mm	
		Back Light	26"	12 CCFL	mm	
		Outline Dimension	32"	760 x 450 x 47.4	mm	[with inverter]
		Pixel Pitch	32"	0.17025 x 0.51075	mm	
		Back Light	32"	16 CCFL	mm	
	LPL(HD)	Outline Dimension	32"	760 x 450 x 48	mm	[with inverter]
		Pixel Pitch	32"	0.17025 x 0.51075	mm	
		Back Light	32"	12 EEFL	mm	
	Display Colors			-		
	Coating			3H, AG/ 2H, AG		LPL, CMO, AUO / Sharp

5. Model Specification

Item		Specification	Remark
Market		Central and South America	
Broadcasting system		PAL SECAM B/G/D/K, PAL I/II, NTSC-M	
Available Channel	BAND	NTSC	
	VHF	2~13	
	UHF	14~69	
	CATV	1~125	
Receiving system		Upper Heterodyne	
Video Input (2EA)		NTSC, PAL-M/N	Rear 1EA, Side 1EA
AV Output (1EA)		NTSC, PAL-M/N	Rear
S-Video Input (1EA)		NTSC, PAL-M/N	Side (S-Video Priority)
Component Input (2EA)		Y/Cb/Cr, Y/ Pb/Pr	Rear
RGB Input (1EA)		RGB-PC, S/W Upgrade	Rear
HDMI Input	2EA	HDMI-DTV, Only PCM MODE	LG30 Tool, 32LG60
	3EA		LG50, LG70 Tool
Audio Input (5EA)		PC Audio, Component (2EA), AV (2EA)	L/R Input
RS-232C		Remote control, Commercial	Side(1EA)-LG30 Tool only (LG50, LG60, LG70 not Support)
USB Input		Divx, MP3, JPEG	Side(1EA) - LG60, LG70 Tool Only (LG30, LG50 Not Support)

6. Component Video Input (Y, PB, PR)

Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed
720*480	15.73	59.94	13.500	SDTV, DVD 480I(525I)
720*480	15.75	60.00	13.514	SDTV, DVD 480I(525I)
720*576	15.625	50.00	13.500	SDTV, DVD 576I(625I) 50Hz
720*480	31.47	59.94	27.000	SDTV 480P
720*480	31.50	60.00	27.027	SDTV 480P
720*576	31.25	50.00	27.000	SDTV 576P 50Hz
1280*720	44.96	59.94	74.176	HDTV 720P
1280*720	45.00	60.00	74.250	HDTV 720P
1280*720	37.50	50.00	74.25	HDTV 720P 50Hz
1920*1080	28.125	50.00	74.250	HDTV 1080I 50Hz,
1920*1080	33.72	59.94	74.176	HDTV 1080I
1920*1080	33.75	60.00	74.25	HDTV 1080I
1920*1080	56.25	50	148.5	HDTV 1080P
1920*1080	67.432	59.94	148.350	HDTV 1080P
1920*1080	67.5	60.00	148.5	HDTV 1080P

7. RGB Input (Analog PC)

Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed	Remark
640*350	31.468	70.80	25.17	EGA	
720*400	31.469	70.08	28.32	DOS	
640*480	31.469	59.94	25.17	VESA(VGA)	
800*600	37.879	60.31	40	VESA(SVGA)	
1024*768	48.363	60	65	VESA(XGA)	
1280*768	47.776	59.87	79.5	VESA(WXGA)	
1360*768	47.72	59.799	84.75	VESA(WXGA)	
1366*768	47.7	60	84.62	VESA(WXGA)	
1280*1024	63.668	59.895	109.00	SXGA	Only FHD
1400*1050	65.317	59.978	121.75	SXGA	Only FHD
1600*1200	74.537	59.869	161.00	UXGA	Only FHD
1920*1080	66.587	59.934	138.50	WUXGA(Reduced Blanking)	Only FHD

8. HDMI input (PC)

- Spec. out but display correctly at only HDMI/DVI IN 1 via DVI to HDMI Cable

Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed	Remark
720_400	31.468	70.08	28.32		
640_480	31.469	59.94	25.17	VESA(VGA)	
800_600	37.879	60.31	40.00	VESA(SVGA)	
1024_768	48.363	60.00	65.00	VESA(XGA)	
1280_768	47.776	59.87	79.5	VESA(WXGA)	
1360_768	47.72	59.799	84.62	VESA(WXGA)	
1366_768	47.7	60	84.62	VESA(WXGA)	
1280_1024	63.595	60.0	108.875	SXGA	Only FHD
1400_1050	65.160	60.0	122.50	SXGA	Only FHD
1600_1200	74.077	60.0	130.375	UXGA	Only FHD
1920_1080	66.647	59.988	138.625	WUXGA	Only FHD

9. HDMI input (DTV)

Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed	Remark
720*480	31.47	59.94	27	SDTV 480P	Support(not spec)
720*480	31.5	60	27.027	SDTV 480P	support(not spec)
720*576	31.25	50	27	SDTV 576P	support(not spec)
1280*720	44.96	59.94	74.176	HDTV 720P	
1280*720	45	60	74.25	HDTV 720P	
1280*720	37.5	50	74.25	HDTV 720P	
1920*1080	28.125	50	74.25	HDTV 1080I	
1920*1080	33.72	59.94	74.176	HDTV 1080I	
1920*1080	33.75	60	74.25	HDTV 1080I	
1920*1080	56.25	50	148.5	HDTV 1080P	
1920*1080	67.432	59.94	148.350	HDTV 1080P	
1920*1080	67.5	60.00	148.5	HDTV 1080P	
1920*1080	27	24	74.25	HDTV 1080P	
1920*1080	33.75	30	74.25	HDTV 1080P	

ADJUSTMENT INSTRUCTION

1. Application Range

This spec. sheet is applied all of the 32/37/42/47/52" LCD TV, LP81A chassis (HURRICANE 5) by manufacturing LG TV Plant all over the world.

2. Specification

- 1) Because this is not a hot chassis, it is not necessary to use an isolation transformer. However, the use of isolation transformer will help protect test instrument.
- 2) Adjustment must be done in the correct order.
- 3) The adjustment must be performed in the circumstance of $25\pm5^{\circ}\text{C}$ of temperature and $65\pm10\%$ of relative humidity if there is no specific designation.
- 4) The input voltage of the receiver must keep 100-220V, 50/60Hz.
- 5) Before adjustment, execute Heat-Run for 15 minutes at RF no signal.

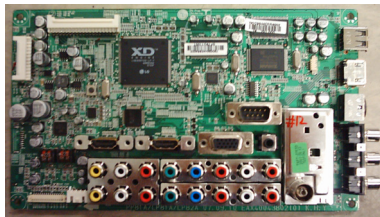
3. S/W program download

3-1. Preliminary steps

- (1) Download method 1 (PCB Assy)
 - HD



- FHD



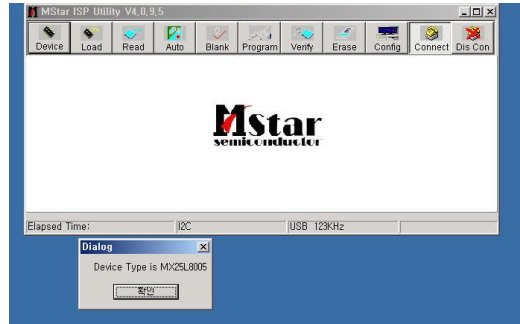
- (2) Connect the download jig to D-sub jack

3-2. Download steps

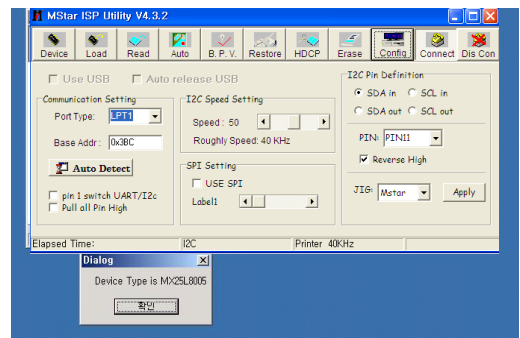
- (1) Execute 'ISP Tool' program in PC, then a main window will be opened



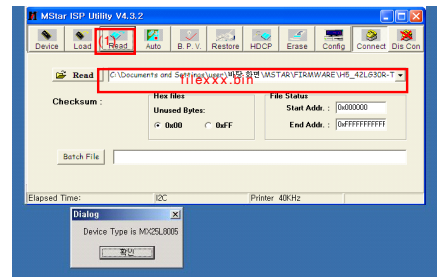
- (2) Click the connect button and confirm "Dialog Box".



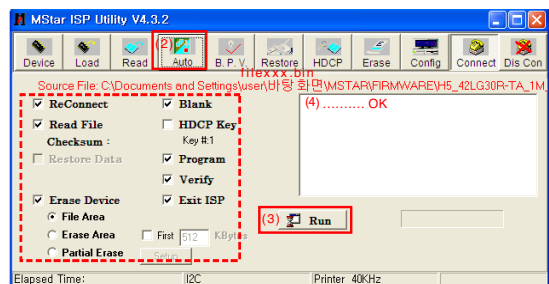
- (3) Click the Config button and Change speed E2PROM Device setting : over the 350Khz



- (4) Read and write bin file
Click "(1)Read" tab, and then load download file(XXXX.bin) by clicking "Read".

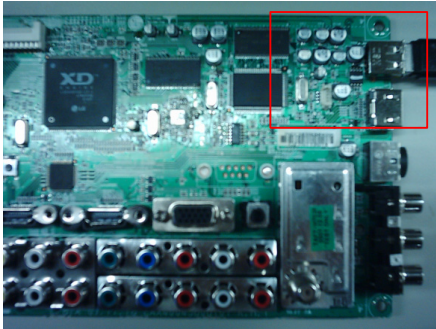


- (5).Click "Auto(2)" tab and set as below
- (6).click "Run(3)".
- (7).After downloading, check "OK(4)" message.

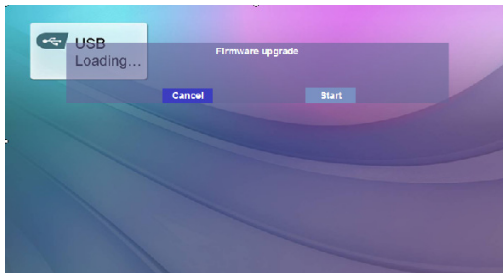


USB DOWNLOAD

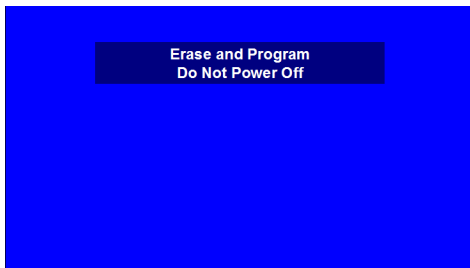
- 1) Put the USB Stick to the USB socket



- 2) Automatically detecting update file in USB Stick



- 3) Select "Start" Button and press "ok" button
Updating is starting.



- 4) Finishing the version updating, you have to put out USB stick and "AC Power" off.
- 5) After putting "AC Power" on and check updated version on your TV.

4. ADC Process

- * Required Equipments
 - Remote controller for adjustment
 - MSPG-925F Pattern Generator

4-1. Method of Auto RGB Color Balance

- Convert to RGB PC in Input-source
- Input the PC 1024x768 @ 60Hz 1/2 Black & White Pattern(MSPG-925F model:60, pattern:54) into RGB.
- Adjust by commanding AUTO_COLOR_ADJUST(0xF1) 0x00 0x02 instruction.



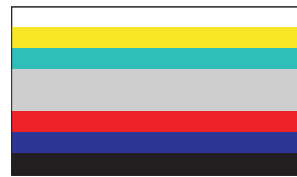
- (1) Confirmation

- We confirm whether "0xF1 (offset), 0xF2 (gain)" address of EEPROM "0xBC" is "0xAA" or not.
- If "0xF1", "0xF2" address of EEPROM "0xBC" isn't "0xAA", we adjust once more
- We can confirm the ADC values from "0x00~0x05" addresses in a page "0xBC"
- * Manual ADC process using Service Remocon. After enter Service Mode by pushing "ADJ" key, execute "Auto-RGB" by pushing "_" key at "Auto-RGB".

4-2. Component input ADC

- (1) Component Gain/Offset Adjustment7

- Convert to Component in Input-source
- Input the Component (Which has 720p@60Hz YPbPr signal : 100% Color Bar (MSPG-925F Model: 217/ Pattern: 65) into Component.



- Adjust by commanding AUTO_COLOR_ADJUST (0xF1) 0x00 0x02 instruction

- (2) Confirmation

- We confirm whether "0xF3 (offset), 0xF4 (gain)" address of EEPROM "0xBC" is "0xAA" or not.
- If "0xF3", "0xF4" address of EEPROM "0xBC" isn't "0xAA", we adjust once more.
- We can confirm the ADC values from "0x06~0x0B" addresses in a page "0xBC".
- * Manual ADC process using Service Remocon. After enter Service Mode by pushing "ADJ" key, execute "Auto-RGB" by pushing "_" key at "Auto-RGB".

** TOOL Option, Area Option change and AC off

Before PCBA check, you have to change the Tool option, Area option and have to AC off/on (Plug out and in)
(If missing this process, set can operate abnormally)

5. TOOL Option, Area Option change

- (1) Profile : Must be changed the option value because being different with some setting value depend on module maker, inch and market.
- (2) Equipment : adjustment remote control.
- (3) Adjustment method
The input methods are same as other chassis.(Use IN-START Key on the Adjust Remocon.)
(If not changed the option, the input menu can differ the model spec.)
* Refer to Job Expression of each main chassis ass'y (EBTxxxxxxx) for Option value

* Never push the IN-STOP KEY after completing the function inspection.

6. EDID (The Extended Display Identification Data) /DDC (Display Data Channel) download

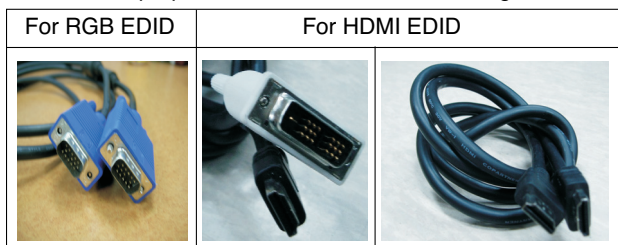
* Caution

Use the proper signal cable for EDID Download

6-1. EDID DOWNLOAD

* Caution:

- Never connect HDMI & D-SUB Cable at the same time.
- Use the proper cables below for EDID Writing



* EDID Data

Item	Condition	Data
Manufacturer ID	GSM	1E6D
Version	Digital : 1	01
Revision	Digital :3	03

* LP81A HD Model EDID

<Analog : 128bytes>

Addr	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
0000	00	FF	FF	FF	FF	FF	FF	00	1E	6D	A					
0010																
0020	11	49	4B	A1	08	00	01	01	45	40	61	40	01	01	01	01
0030	01	01	01	01	01	01	1B	21	50	A0	51	00	1E	30	48	88
0040	35	00	BC	88	21	00	00	1C	0E	1F	00	80	51	00	1E	30
0050	40	80	37	00	BC	88	21	00	00	18						
0060																
0070	00	32	4B	1C	43	0F	00	0A	20	20	20	20	20	20	01	E
0080	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0090	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
00A0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
00B0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
00C0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
00D0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
00E0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
00F0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

<HDMI 1 : 256bytes> / <HDMI 2 : 256bytes>

The data is same without Physical address

Addr	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
0000	00	FF	FF	FF	FF	FF	FF	00	1E	6D	A					
0010																
0020	11	49	4B	A1	08	00	01	01	45	40	61	40	01	01	01	01
0030	01	01	01	01	01	01	1B	21	50	A0	51	00	1E	30	48	88
0040	35	00	BC	88	21	00	00	1C	0E	1F	00	80	51	00	1E	30
0050	40	80	37	00	BC	88	21	00	00	18						
0060																
0070	00	32	4B	1C	43	0F	00	0A	20	20	20	20	20	20	01	E
0080	02	03	26	F1	50	02	03	04	05	07	10	11	12	13	14	16
0090	1F	20	21	22	81	23	09	07	07	83	01	00	00	68	03	0C
00A0	00															
00B0	35	00	BC	88	21	00	00	1E	8C	0A	D0	8A	20	E0	2D	10
00C0	10	3E	96	00	13	8E	21	00	00	18	8C	0A	A0	14	51	F0
00D0	16	00	26	7C	43	00	C4	8E	21	00	00	98	01	1D	80	18
00E0	71	1C	16	20	58	2C	25	00	C4	8E	21	00	00	9E	00	00
00F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

-> Physical address(F) : HDMI 1 -> 10, HDMI 2 -> 20

- Detail EDID Options are below (A, B, C, D, E, F)

A. Product ID

B. Serial No: Controlled on production line

C. Month, Year: Controlled on production line:

ex) Monthly: '09 '09

Year: '2007 E '11'

D. Model Name(Hex):

Model name	Model Name(HEX)															
LG TV	00	00	00	FC	00	4C	47	20	54	56	0A	20	20	20	20	20

E Checksum: Changeable by total EDID data

6-2. HDCP SETTING

(High-Bandwidth Digital Contents Protection)

- Connect D-sub Signal Cable to D-Sub Jack
- Input HDCP key with HDCP-key- in-program
- HDCP Key value is stored on EEPROM(AT24C64) which is From "0x80" addresses of 0xA0 page
- AC off/ on and on HDCP button of MSPG925 and confirm whether picture is displayed or not of using MSPG925
- HDCP Key value is different among the sets.,

7. Adjustment of White Balance

7-1. Purpose and Principle for adjustment of the color temperature

- Purpose : Adjust the color temperature to reduce the deviation of the module color temperature.
- Principle : To adjust the white balance without the saturation, Fix the one of R/G/B gain to C0 and decrease the others.

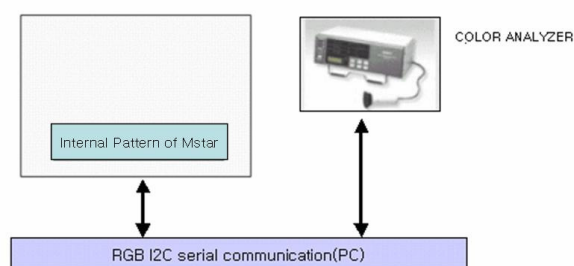
7-2. Adjustment mode : Two modes of Cool and Warm

(Medium data is automatically calibrated by the Cool data)

* Required Equipment

- Remote controller for adjustment
- Color Analyzer : CA100+ or CA-210 or same product (ch:9)
- Auto W/B adjustment instrument(only for Auto adjustment)

7-3. Connecting diagram of equipment for measuring (For Automatic Adjustment)



- (1) Enter the adjustment mode of DDC
 - Set command delay time : 50ms
 - Enter the DDC adjustment mode at the same time heat-run mode when pushing the power on by power only key
 - Maintain the DDC adjustment mode with same condition of Heat-run (Maintain after AC off/on in status of Heat-run pattern display)
- (2) Release the DDC adjustment mode
 - Release the adjust mode after AC off/on or std-by off/on in status of finishing the Hear-run mode
 - Release the Adjust mode when receiving the aging off command(F3 00 00) from adjustment equipment
 - Need to transmit the aging off command to TV set after finishing the adjustment.
 - Check DDC adjust mode release by exit key and release DDC adjust mode
- (3) Enter the adjust mode of white balance
 - Enter the white balance adjustment mode with aging command(F3, 00, FF)

* Luminance min value is 200cd/m²≥ in the cool mode (For LCD)

7-4. Adjustment of White Balance (for Manual adjustment)

- (1) Adjustment mode : Two modes (Cool and Warm)
(Medium data is automatically calibrated by the Cool data)
- (2) Color analyzer(CA100+, CA210) should be used in the calibrated ch by CS-1000(LCD : CH9, PDP : CH10)
- (3) Operate the zero-calibration of the CA100+ or CA-210, then stick sensor to the module when adjusting.
- (4) For manual adjustment, it is also possible by the following sequence.
 - 1) Select white pattern of heat-run by pressing "POWER ON" key on remote control for adjustment then operate heat run longer than 15 minutes. (If not executed this step, the condition for W/B may be different.)
 - 2) Push "Exit" key.
 - 3) Change to the AV mode by remote control.(Push front-AV or Input key)
 - 4) Input external pattern(85% white pattern)
 - 5) Push the ADJ key two times (entering White Balance mode)
 - 6) Stick the sensor to the center of the screen and select each items (Red/Green/Blue Gain and Offset) using ▲/▼(CH +/-) key on R/C.
 - 7) Adjust R/ G/ B Gain using ◀/▶(VOL +/-) key on R/C.
 - 8) Adjust two modes (Cool and Warm)
(Fix the one of R/G/B and change the others)
 - 9) When adjustment is completed, Exit adjustment mode using EXIT key on R/C.

* CASE

First adjust the coordinate far away from the target value(x, y).

- (1) x, y > target
 - 1) Decrease the R, G.
- (2) x, y < target
 - 1) First decrease the B gain,
 - 2) Decrease the one of the others.
 - In case of decreasing the x, decreasing the R : fix G
 - In case of decreasing the y, decreasing the G : fix R

- (3) x > target , y < target
 - 1) First decrease B, so make y a little more than the target.
 - 2) Adjust x value by decreasing the R
- (4) x < target , y > target
 - 1) First decrease B, so make x a little more than the target.
 - 2) Adjust x value by decreasing the G

- Standard color coordinate and temperature when using the CA100+ or CA210 equipment

Mode	Color coordinate		Temp	Δuv
	X	Y		
Cool	0.276±0.002	0.283±0.002	11,000K	0.000
Warm	0.313±0.002	0.329±0.002	6,500K	0.003

** DDC Command set **

Adjustment	CMD(HEX)	ADR	VALUE	detail
Aging On/Off	F3	00	FF/00	FF : ON / 00 : OFF
Input select	F4	00		0x10 : TV 0x20 : AV1 0x21 : AV2 0x40 : Component1 0x41 : Component2 0x60 : RGB 0x90 : HDMI1 0x91 : HDMI2
R GAIN	16	00	00 - C0	GAIN adjustment CSM COOL
G GAIN	18		00 - C0	
B GAIN	1A		00 - C0	
R GAIN	16	01	00 - C0	GAIN adjustment CSM NORMAL
G GAIN	18		00 - C0	
B GAIN	1A		00 - C0	
R GAIN	16	02	00 - C0	GAIN adjustment CSM WARM
G GAIN	18		00 - C0	
B GAIN	1A		00 - C0	
CSM mode	F2	00	00	COOL
			01	NORMAL
			02	WARM
AUTO ADC	F1	00	0, 1, 2	0: Offset adjustment 1: Gain adjustment 2: Offset and Gain adjustment
EEPROM Read	E7	00	00	EEPROM read
EEPROMWrite	E8	00	data	EEPROM write

8. DDC command protocol

8-1. Signal TABLE

START 6E A 50 A 84 A 03 A CMD A ADH A VAL A CS A STOP

8-2. E2PROM Data Write

(1) Signal TABLE

START 6E A 50 A 84+n A 03 A CMD A ADH A ADL A
Data_1 A . . . Data_n A CS A STOP Delay 20m

LEN : 84h+Bytes

CMD : E8h

ADH : E2PROM Slave Address (A0,A2,A4,A6), Not 00h
(Reserved by BufferToEEPROM)

ADL : E2PROM Sub Address(00~FF)

Data : Write data

Delay : 20ms

(2) Command Set

Adjustment contents	CMD(hex)	LEN	Details
EEPROM WRITE	E8h	94	16-Byte Write
		(84+n)h	n-byte Write

* Purpose

- 1) EDID write : 16-byte by 16-byte, 8 order (128-byte)
write(TO "00 – 7F" of "EEPROM Page A4").
- 2) FOS Default write : 14-mode data write
(SyncFlags, HPeriodH, HPeriodL, VtotalH, VtotalL,
SrcHTotalH, SrcHTotalL, SrcHStartH, SrcHStartL,
SrcVStartH, SrcVStartL, HsyncPhase).
- 3) Random Data write : write the appointment Address of
E2PROM.

(3) E2PROM Data Read

1) Signal TABLE

START 6E A 50 A 84 A 03 A CMD A ADH A ADL A CS A STOP
Delay 150ms
START 6F A D1 A - - - - - Dn A STOP
128 Bytes

2) COMMAND SET

Adjustment contents	CMD(hex)	ADH(hex)	ADL(hex)	Details
EEPROM READ	E7	A0	0	0-Page 0~7F Read
			80	0-Page 80~FF Read
		A2	0	1-Page 0~7F Read
			80	1-Page 80~FF Read
		A4	0	2-Page 0~7F Read
			80	2-Page 80~FF Read
		A6	0	3-Page 0~7F Read
			80	3-Page 80~FF Read

* Purpose : To read(84h) the appointment Address of E2PROM
by 128(80h)-byte

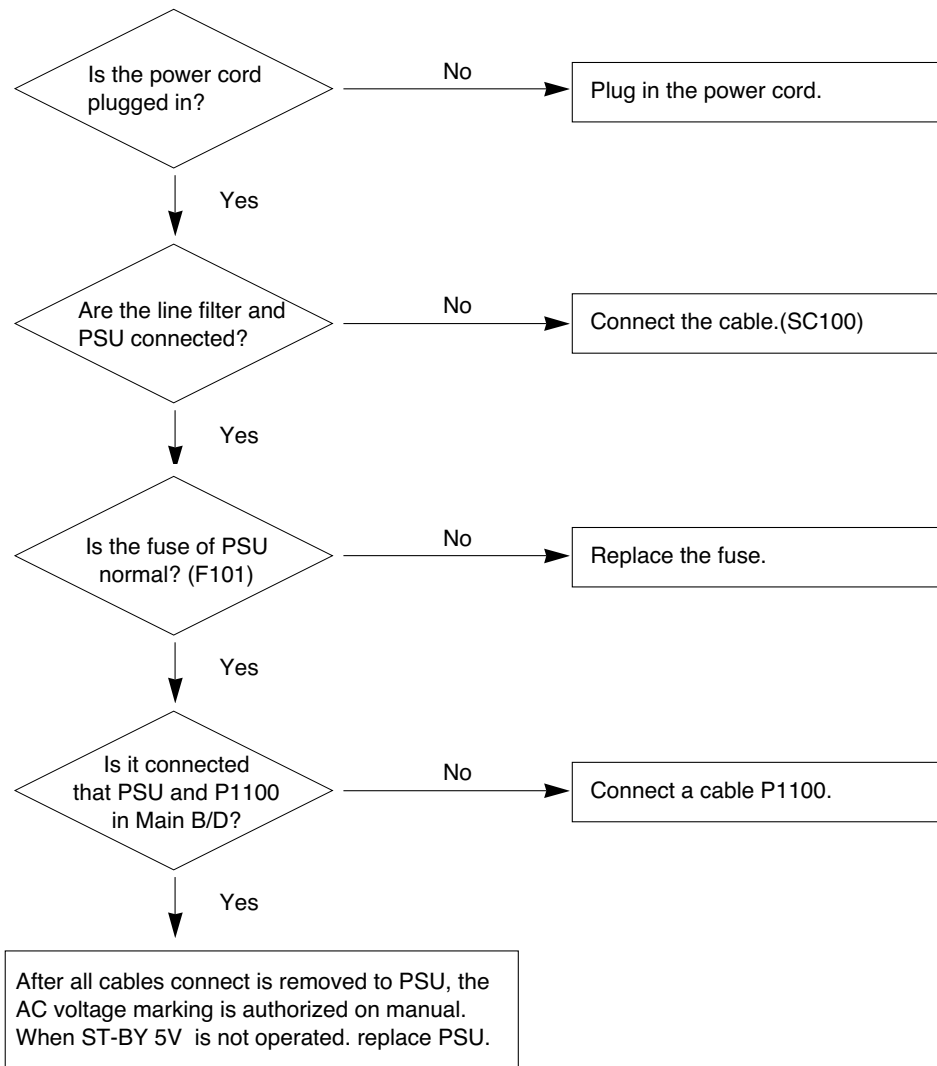
TROUBLESHOOTING

1. No power

(1) Symptom

- 1) It is not discharged minutely from module.
- 2) Light does not come into the front LED.

(2) Check process

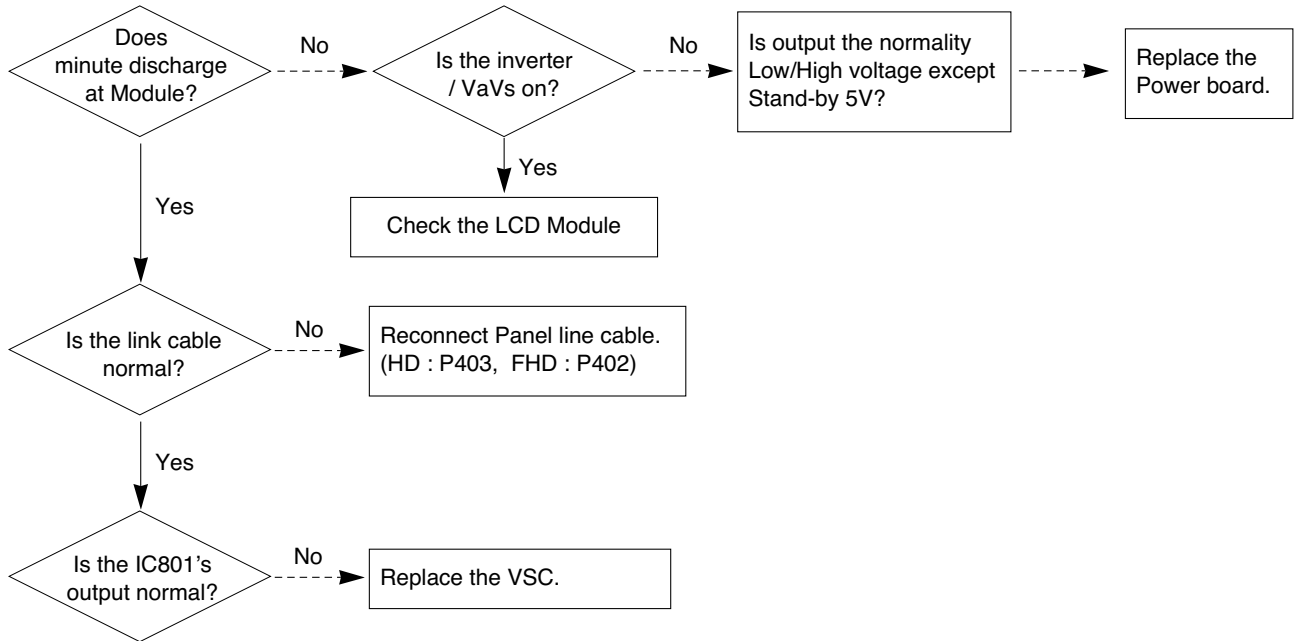


2. No Raster

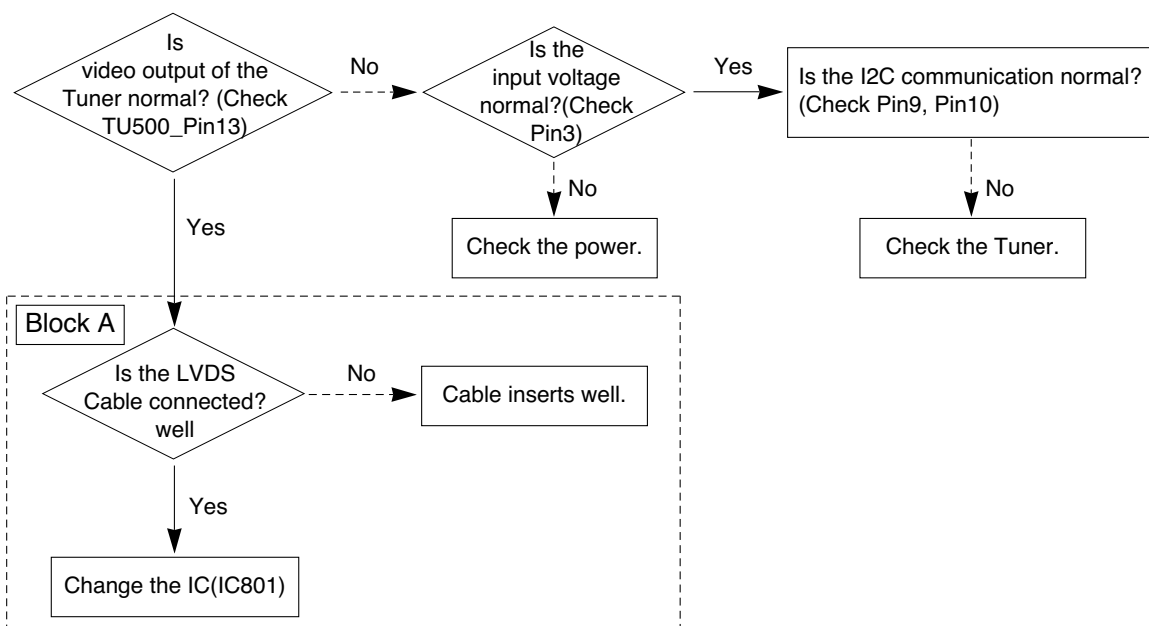
(1) Symptom

- 1) No OSD and image occur at screen.
- 2) It maintains the condition where the front LED is green.

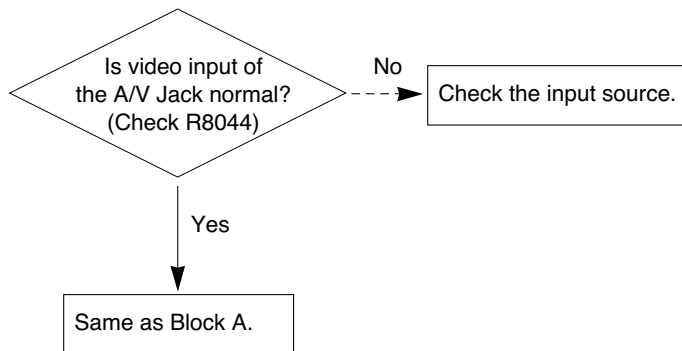
(2) Check process



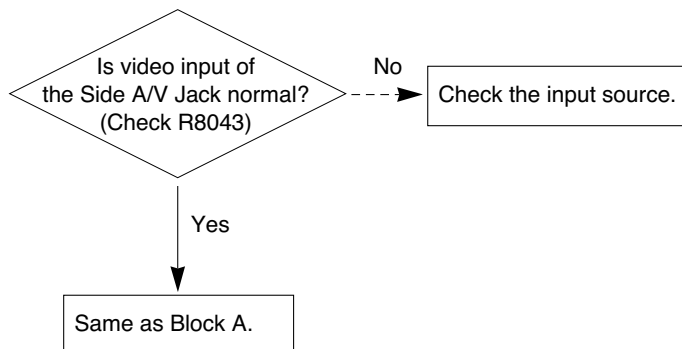
3. Unusual display from RF mode



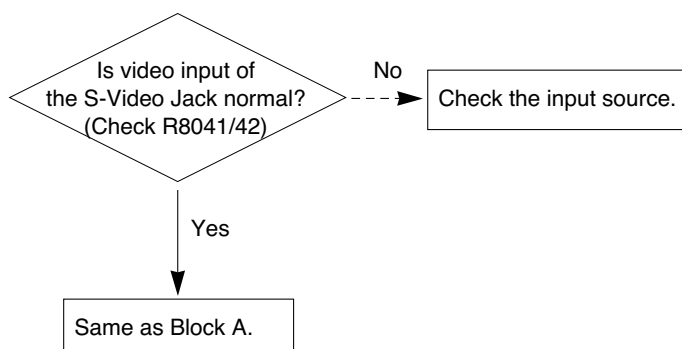
4. Unusual display from rear AV mode.



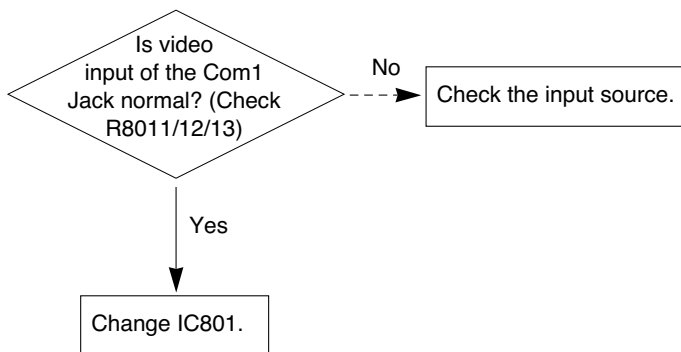
5. Unusual display from Side AV model.



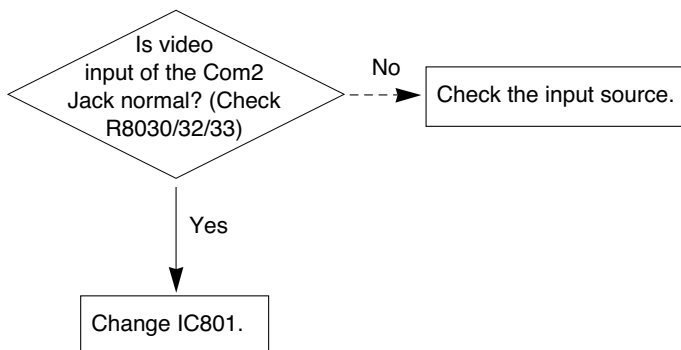
6. Unusual display from Side S-Video mode.



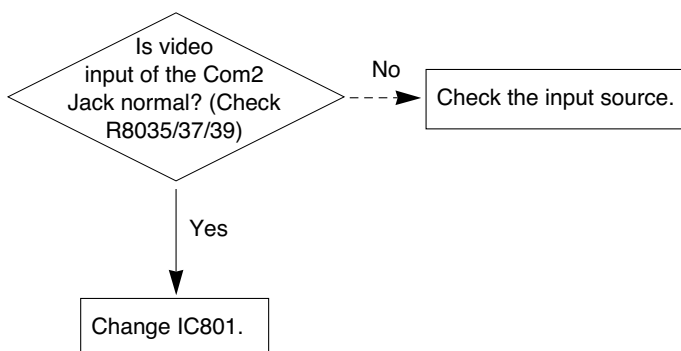
7. Unusual display from component 1 mode



8. Unusual display from component 2 model



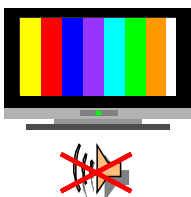
9. Unusual display from RGB model



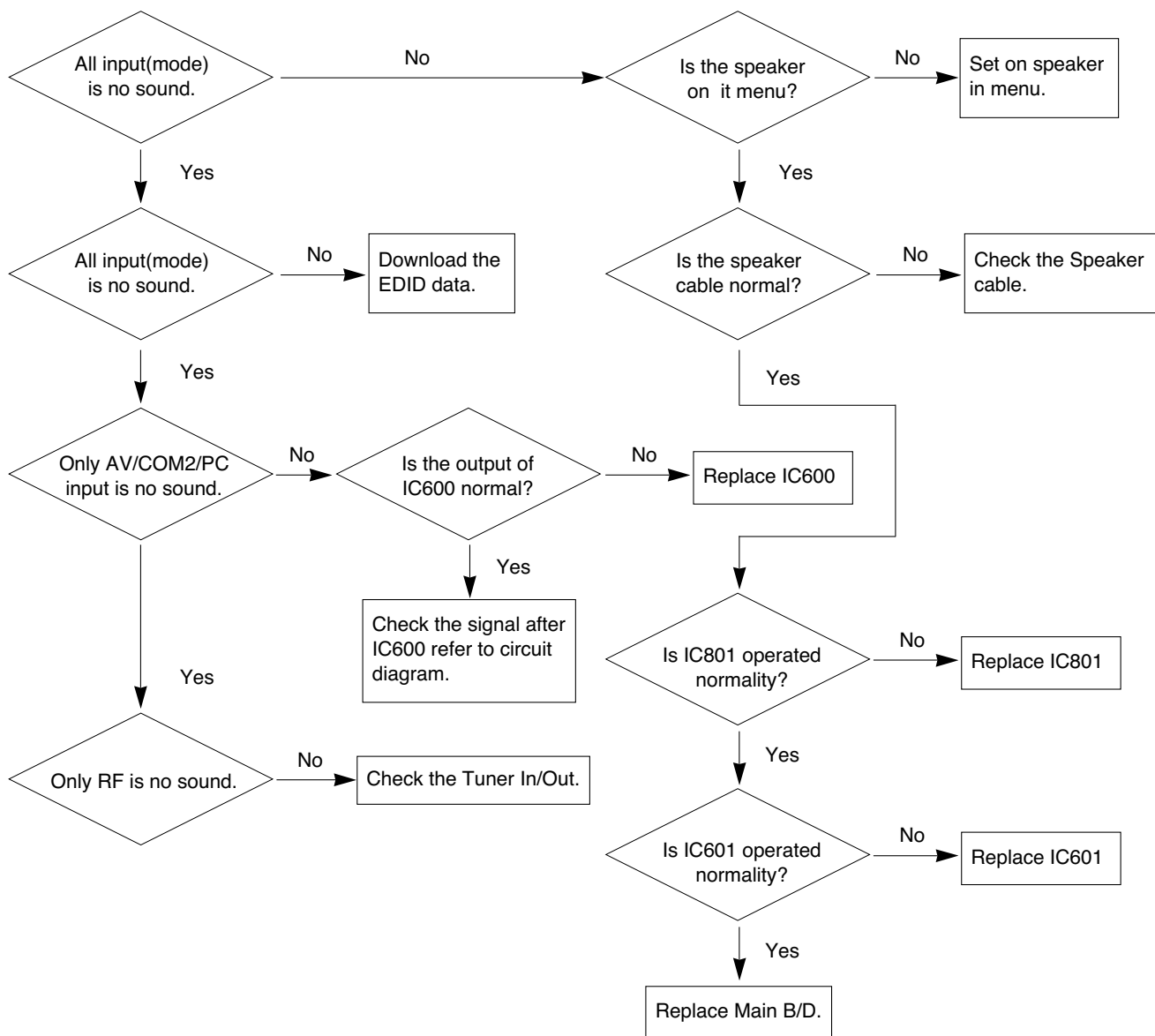
10. No Sound

(1) Symptom

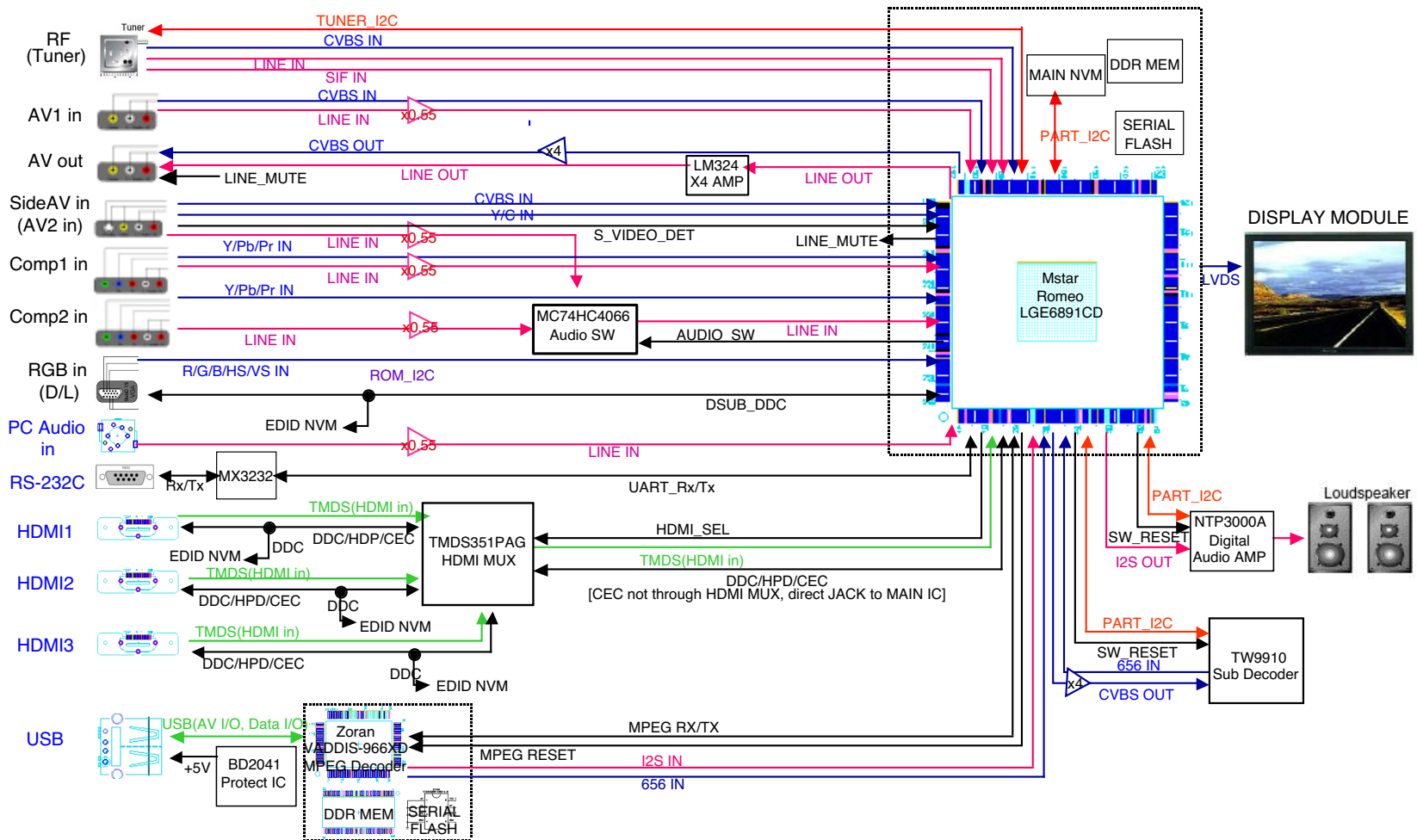
- 1) LED is green
- 2) Screen display but sound is not output.



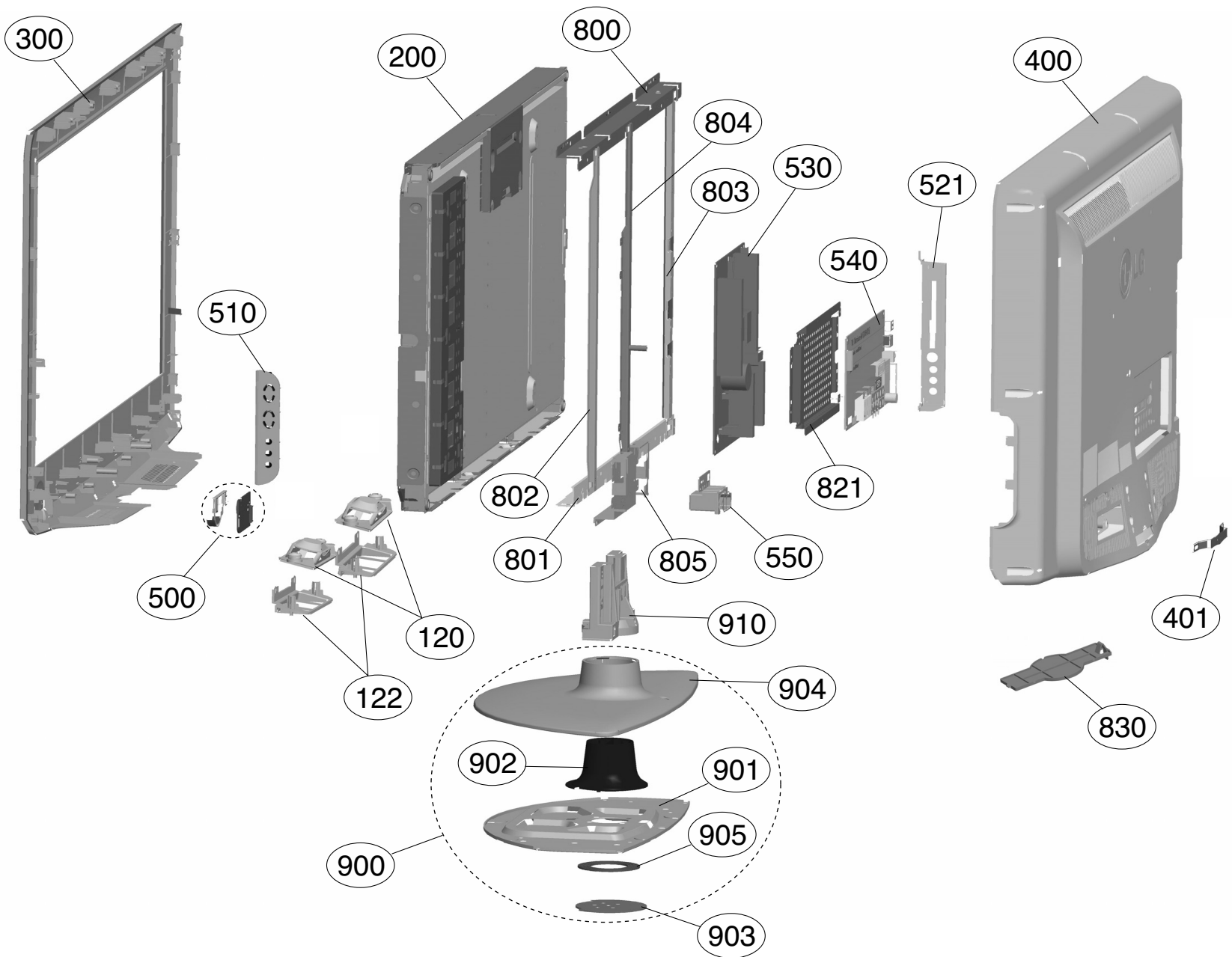
(2) Check process



BLOCK DIAGRAM



EXPLODED VIEW

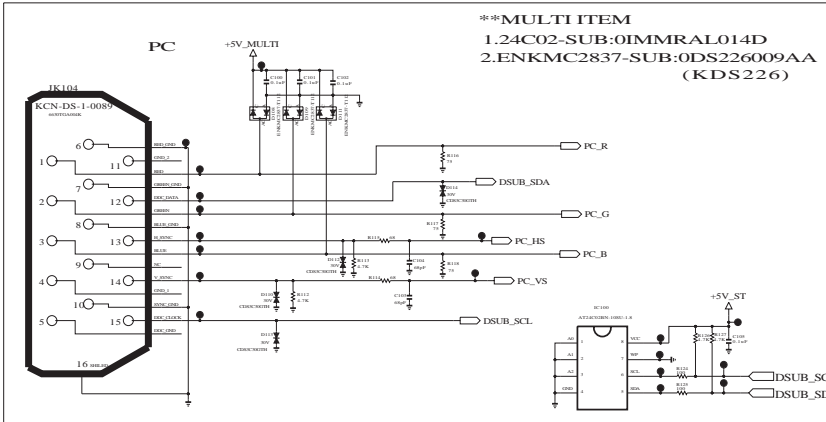
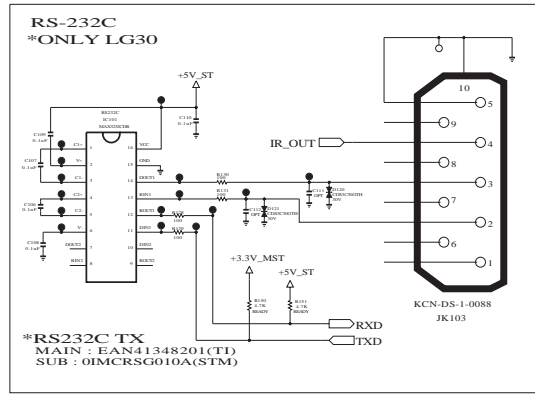


JK101 COMPONENT 2

1E RD1O_SPRING
4E 3E CONTACT
2E RD1IP_CAN1
5E 2E 2HC_LUG_L
3E 5E 5H1P_CAN
6E 3E 3DC_LUG_L
1C RD1IP_CAN1
2C 2C 2HC_LUG_L
5C 5B 5H1P_CAN
3C 3B 3DC_LUG_L
1B 1B 1HC_LUG_L
2B 2B 2H1P_CAN
5B 5B 5DC_LUG_L
3B 3B 3H1P_CAN
4A 3A ENJO_SPRING
6A 4A NCCONTACT
1A 6A EN1P_CAN

JK100 COMPONENT 1

1E RD1O_SPRING
4E 3E CONTACT
2E RD1IP_CAN2
5E 2E 2HC_LUG_L
3E 5E 5H1P_CAN
6E 3E 3DC_LUG_L
1C RD1IP_CAN1
2C 2C 2HC_LUG_L
5C 5B 5H1P_CAN
3C 3B 3DC_LUG_L
1B 1B 1HC_LUG_L
2B 2B 2H1P_CAN
5B 5B 5DC_LUG_L
3B 3B 3H1P_CAN
4A 3A ENJO_SPRING
6A 4A NCCONTACT
1A 6A EN1P_CAN

[illegible]

The schematic diagram illustrates the electrical connections for the SIDE AV connector. It is divided into two main sections: a top section for pins 1A through 6C and a bottom section for pins 7A through 10C.

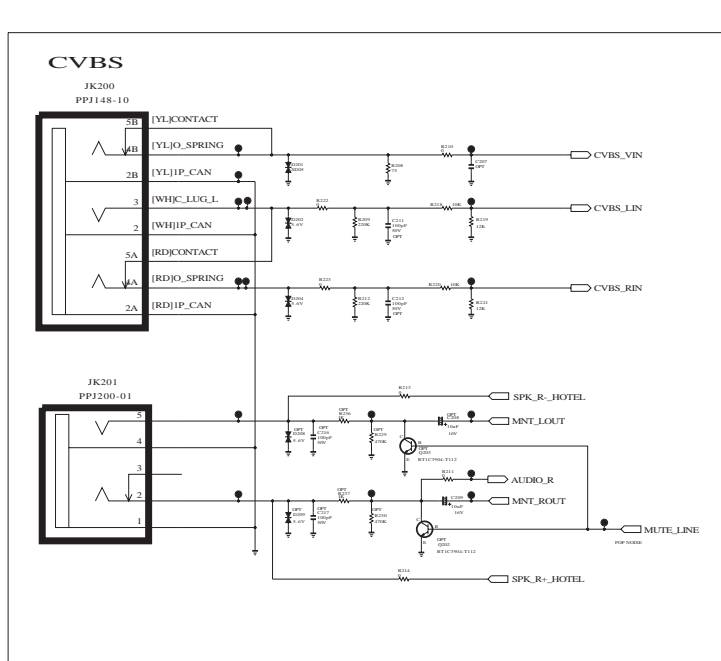
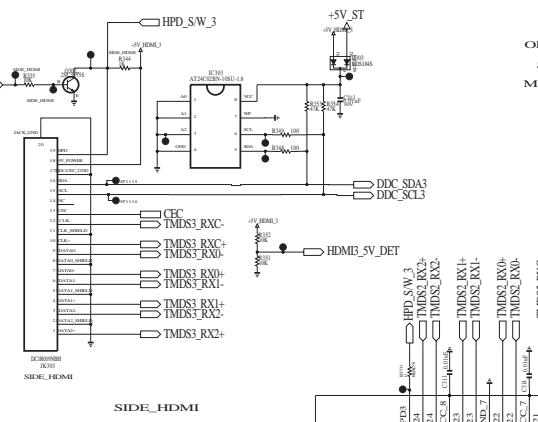
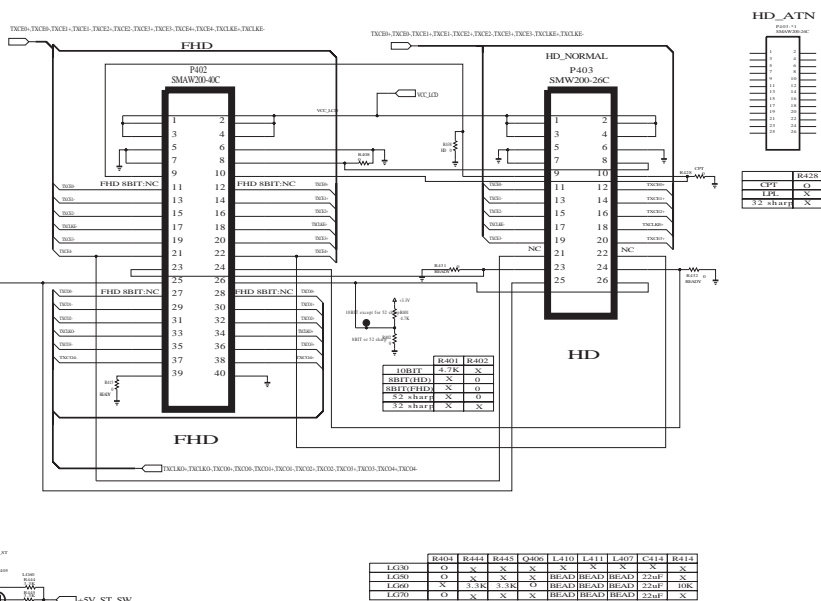
Top Section (Pins 1A to 6C):

- Pin 1A:** Labeled [YL]JO_SPRING, connected to SIDE_V.
- Pin 5A:** Labeled [YL]CONTACT, connected to SIDE_V.
- Pin 2A:** Labeled [YL]JU_CAN, connected to SIDE_V.
- Pin 3B:** Labeled [WH]C_LUG, connected to SIDE_LIN.
- Pin 2B:** Labeled [WH]JU_CAN, connected to SIDE_LIN.
- Pin 4C:** Labeled [RD]JO_SPRING, connected to SIDE_LIN.
- Pin 5C:** Labeled [RD]CONTACT, connected to SIDE_LIN.
- Pin 6C:** Labeled [RD]JU_CAN, connected to SIDE_LIN.

Bottom Section (Pins 7A to 10C):

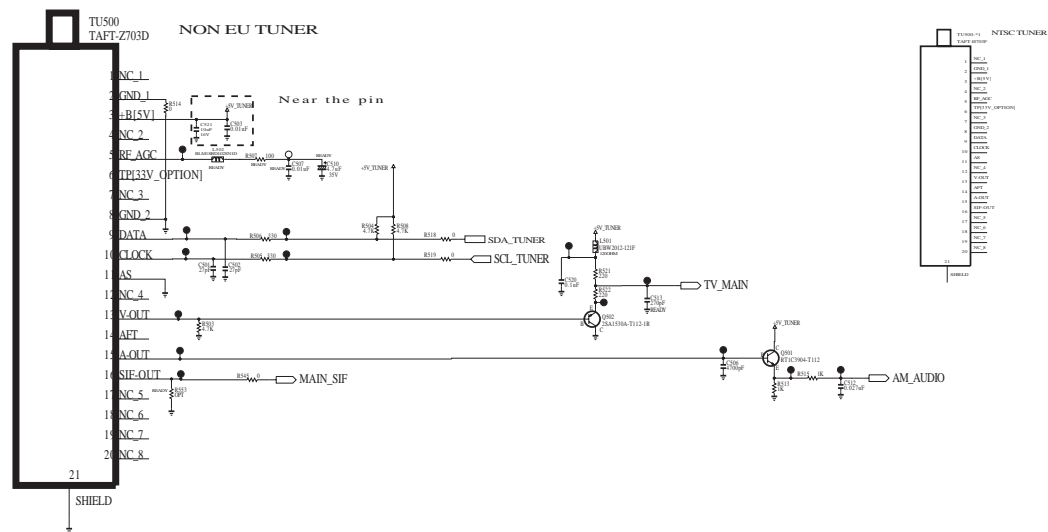
- Pin 7A:** Labeled [WH]R2, connected to SIDE_Y.
- Pin 8A:** Labeled [WH]R3, connected to SIDE_Y.
- Pin 9A:** Labeled [WH]R4, connected to SIDE_Y.
- Pin 10A:** Labeled [WH]R5, connected to SIDE_Y.
- Pin 7B:** Labeled [WH]R6, connected to SIDE_C.
- Pin 8B:** Labeled [WH]R7, connected to SIDE_C.
- Pin 9B:** Labeled [WH]R8, connected to SIDE_C.
- Pin 10B:** Labeled [WH]R9, connected to SIDE_C.
- Pin 7C:** Labeled [WH]R10, connected to SIDE_C.
- Pin 8C:** Labeled [WH]R11, connected to SIDE_C.
- Pin 9C:** Labeled [WH]R12, connected to SIDE_C.
- Pin 10C:** Labeled [WH]R13, connected to SIDE_C.

The diagram includes various component values and labels, such as [YL]JO_SPRING, [YL]CONTACT, [YL]JU_CAN, [WH]C_LUG, [WH]JU_CAN, [RD]JO_SPRING, [RD]CONTACT, [RD]JU_CAN, [WH]R2, [WH]R3, [WH]R4, [WH]R5, [WH]R6, [WH]R7, [WH]R8, [WH]R9, [WH]R10, [WH]R11, [WH]R12, [WH]R13, and SIDE_V, SIDE_LIN, SIDE_Y, SIDE_C, S_VIDEO_DET.

[illegible][illegible]

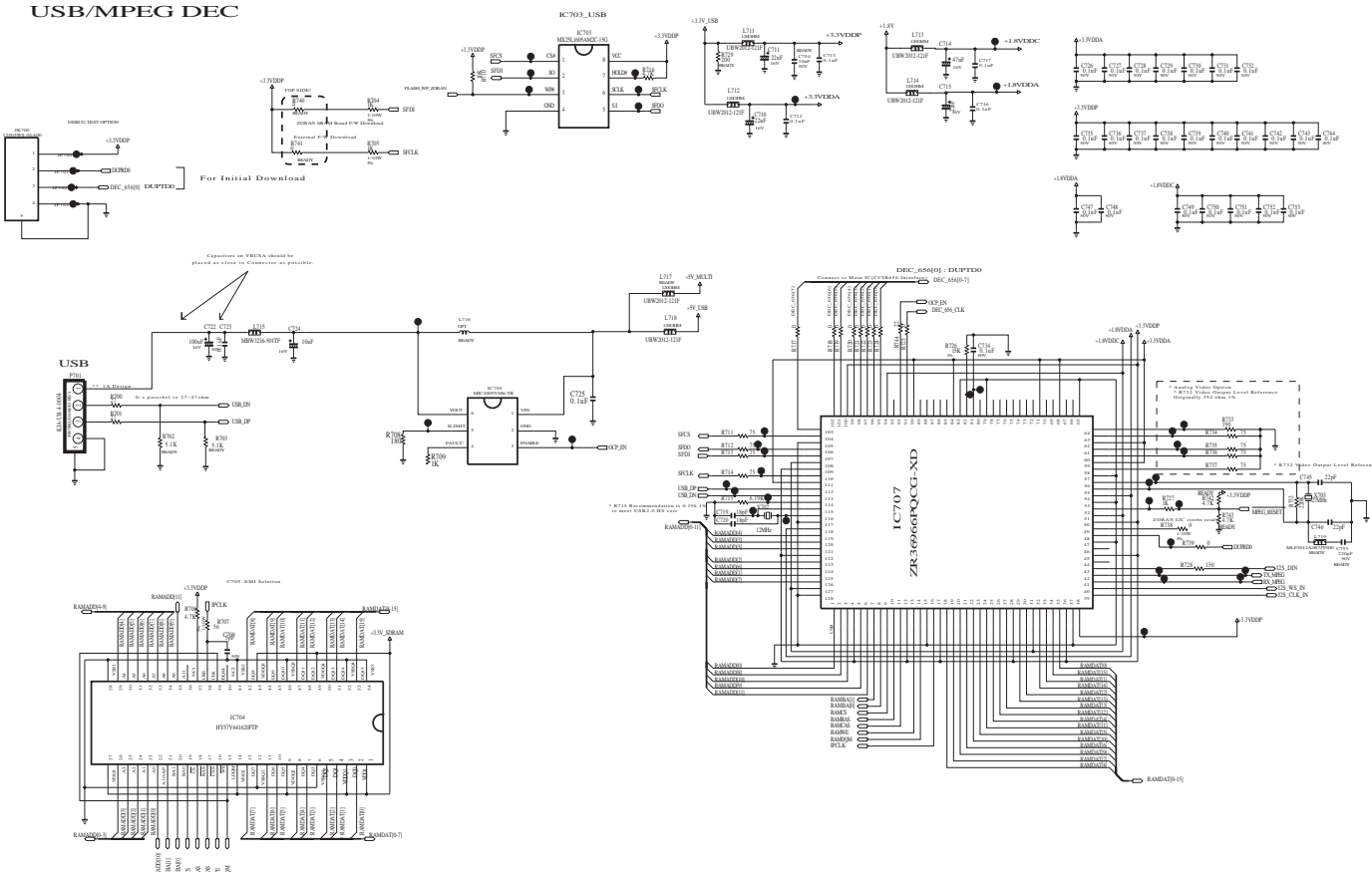
LGE Internal Use Only

TUNER



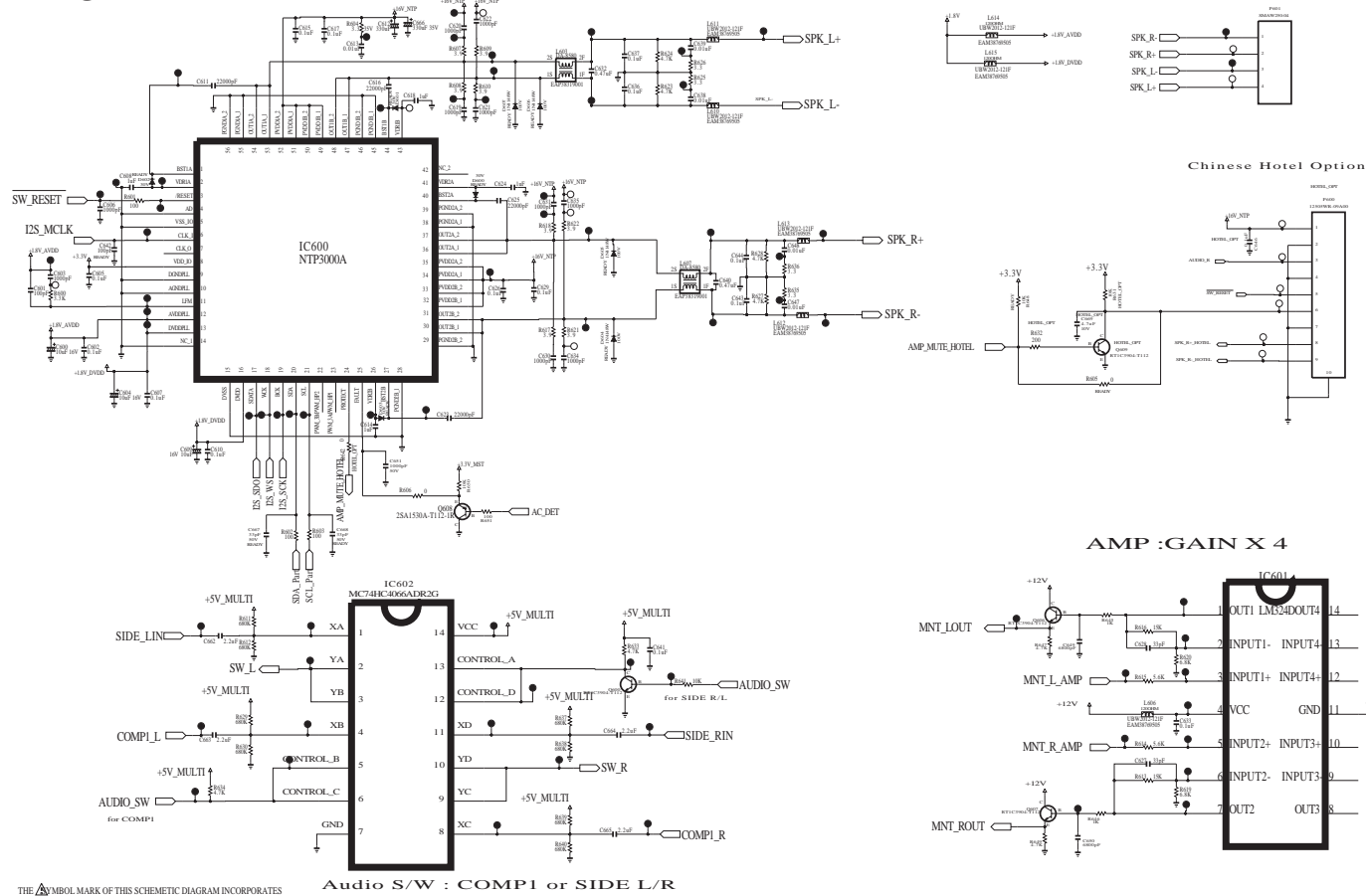
THE MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FILRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURER SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE MARK OF THE SCHEMATIC.

USB/MPEG DEC



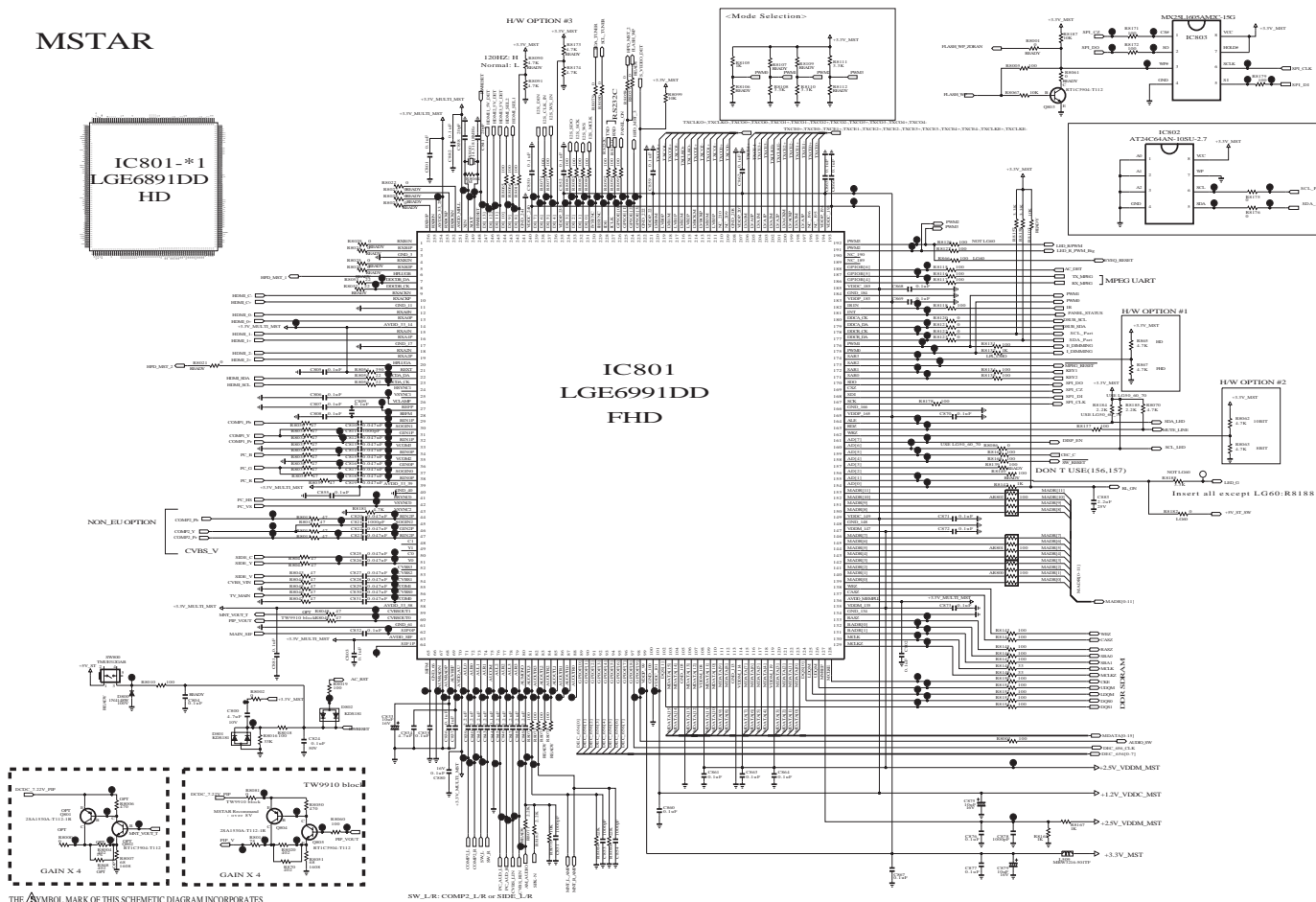
THE MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FILRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURER SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE MARK OF THE SCHEMATIC.

Digital Audio AMP



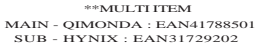
THE MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FILRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURER SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE MARK OF THE SCHEMATIC.

MSTAR



THE MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FILRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURER SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE MARK OF THE SCHEMATIC.

DDR



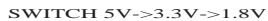
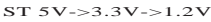
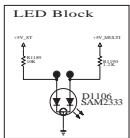
THE SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FILRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURES SPECIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SYMBOL MARK OF THE SCHEMATIC



THE  SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FILRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURES SPECIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE  SYMBOL MARK OF THE SCHEMATIC

PPWER

*PANEL OPTION

	R1197	R1122	C1114	R1127	R1183	R1155	R1103	R1185	R1186	R1187	R1104
Sharp S2	O	X	X	O	O	X	X	X	X	X	O
AUO	O	X	X	O	O	X	X	X	X	X	O
CMO 32/42/47	X	4.7K	0.47u	O	X	O	O	O	X	X	X
CMO 57	X	4.7K	0.47u	X	O	O	O	X	O	O	X
Sharp 32	X	X	X	X	X	X	X	X	X	X	O
(see Source/CMO26)	X	4.7K	0.47u	O	O	X	X	X	X	X	O



THE  MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE  MARK OF THE SCHEMATIC